Claims

1. An optical transmitter comprising:

a differential encoder having first and second outputs, the first and second outputs being of opposite polarity to one another,

a first RZ converter connected to the first output of the differential encoder and a second RZ converter connected to the second output of the differential encoder; and

a dual electrode Mach Zehnder modulator to which an unmodulated coherent light source is coupled, wherein the output of the first RZ converter is connected to a first electrode of the Mach Zehnder modulator and the output of the second RZ converter is connected to a second electrode of the Mach Zehnder modulator.

2. A transmitter according to claim 1, further including inverting RZ drivers to convert RZ signals output from the RZ converters to inverted RZ signals.

3. A transmitter according to claim 1 or 2, wherein one of the RZ converter outputs can be delayed by adjusting the phase of a clock signal input to the RZ converter.

4. A method of encoding data as a differential phase shift keyed RZ optical signal comprising the steps of:

differentially encoding the data to produce two data streams of opposite polarity;

converting each data stream to RZ signal format; and

driving a first electrode of a dual electrode Mach Zehnder modulator to which an unmodulated coherent light source is coupled with a first of the two data streams and driving a second electrode of the dual electrode Mach Zehnder modulator with a second of the two data streams.

5. A method according to claim 4, wherein the RZ data streams are inverted RZ data streams.